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**Testimony of**

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**on**

**“Role of Cat Bonds in Managing Catastrophe Risk”**

**before**

**The Capital Markets, Insurance, and Government Sponsored Enterprises**

**and**

**The Housing and Community Opportunity**

**Subcommittees of the**

**Financial Services Committee,**

**US House of Representatives**

I would like to thank Chairman Kanjorski and Chairwoman Waters for holding this hearing on HR 3355, the Homeowners Defense Act of 2007. My name is Dan Ozizmir. I am the Managing Director and Head of Asset-Backed/Insurance-Linked Securities/Environmental and Commodity Markets for Swiss Re Capital Management & Advisory. Swiss Re Capital Management & Advisory is a subsidiary of Swiss Re, the largest reinsurer in the US and the world. Swiss Re Capital Markets is a member of the Securities Industry and Financial Markets Association. Swiss Re is a member of the Reinsurance Association of America.

Swiss Re has been a leader in insurance-linked securities market. We have underwritten more catastrophe bonds than any other broker dealer in the last five years. And, in 1997, sponsored one of the first catastrophe or cat bond transactions, SR Earthquake Ltd. This market provides solutions for a broad range of risks including both life insurance risk, catastrophe risk, as well as other non-life risks. We continue to have a strong and strategic interest in the insurance-linked securities market and participate in many ways, including by:

- Acting as an arranger of solutions (for example, structuring and underwriting catastrophe bonds),
- Trading insurance-linked securities and other insurance risk in many different forms, and
- Accessing the risk market as an alternative source of capital (e.g., sponsoring a life insurance embedded value securitization)

We believe that the insurance-linked securities market complements rather than competes with our core reinsurance businesses.

Five years ago I testified in front of many of you and described the insurance-linked securities market as a small but strategically important source of capital for Swiss Re. Today this market not only remains strategically important, but it has grown from approximately \$7 billion outstanding in 2002 to approximately \$32 billion outstanding in 2007, and plays a meaningful role in making reinsurance and insurance more available and affordable. Back then, only a handful of international reinsurers and U.S. insurers had tapped into the market. Today, many major U.S. property insurers have accessed the market. Even if they have not done so directly, most of their reinsurers have done so and the insurers have thus indirectly accessed the same capacity.

My comments today will focus only on the current and possible future direction of the cat, bond segment, which represents \$12 billion of the outstanding \$32 billion in insurance-linked securities. I will do so by briefly answering:

- What is the purpose of a cat bond?
- What motivates investors?
- How do cat bonds work?
- What is the current and future impact of the cat bond market?

### **What Is the Purpose of a Catastrophe Bond?**

Large catastrophes in the U.S. and worldwide have the potential to cause insured losses in the tens or even hundreds of billions of dollars. For instance, Hurricane Katrina caused over \$40 billion in losses in 2005. Cat bonds exist to help insurers make sure they can honor their policy obligations to pay claims to policyholders after such catastrophes.

Cat bonds also help reinsurers, as well as corporations and government entities but for simplification my discussion will focus primarily on insurers as sponsors.

Besides cat bonds, insurers have a number of other tools at their disposal to manage their peak catastrophe risks including:

- Raising more equity capital by selling more company stock;
- Reinsuring risks to the reinsurance markets; and
- Limiting risks via the underwriting and asset management process.

While not an exact substitute for any of these approaches, transferring risks to the cat bond market complements these other tools in particular for certain peak catastrophe risks to the insurance industry, such as East and Gulf Coast hurricanes and California earthquakes.

An insurer needs to hold significantly more equity to underwrite peak exposures, like a Florida hurricane or California earthquake, than it does to underwrite non-peak exposures such as a single house fire or auto accident. As the insurer needs to pass on its cost of capital to policy holders, this increased cost of capital helps explain why insurance costs more in peak exposure zones even if the probability of loss is equal.

Cat bonds offer other benefits beyond merely transferring the risk to another party. Unlike traditional reinsurance, catastrophe bonds can create multi-year capacity at a fixed price and eliminate default risk.

In addition, in some catastrophe bond structures, insurers may receive recoveries well before paying claims (sometimes years before) creating a liquidity cushion. While generally only a short gap exists between paying claims and recovering reinsurance, this timing advantage is appealing to some issuers.

### **What Motivates Investors?**

So we know why insurers want to sponsor cat bonds but why do investors buy them? To answer this, we must first talk about who invests. Direct investment is limited to qualified institutional investors. The largest investors include large fixed income money managers, dedicated funds, banks, and multi-strategy hedge funds. By dedicated funds, we mean hedge funds or money managers with a single strategy of

investing in insurance-linked securities. Note that insurers and reinsurers as well as private equity firms also play a minor role. By way of geography, a little over 60% of buyers are based in the U.S., about one-quarter in Europe, about 10% in Bermuda with the remainder primarily in Asia.

While investor motivations vary, the primary motivation for investing is to add diversification to an investment portfolio and to achieve a higher risk-adjusted return for an overall portfolio. Adding catastrophe bonds to a fixed income portfolio reduces the expected standard deviation for the portfolio, improving the portfolio's overall risk-return profile. In other words, the return stays the same but the portfolio risk goes down.

This occurs because defaults on corporate bonds and natural disasters are assumed to be largely uncorrelated. As an example, historically there has been essentially no relationship between earthquakes and corporate bond defaults. Even in a non-default context, catastrophe bonds provide diversification for investors. We have seen this during the recent turmoil in the credit markets, where catastrophe bond prices have remained unaffected.

The development of third party cat models has also attracted more investors. For any given investment, they can review third party catastrophe models also reviewed by the rating agencies. These models assist investors in evaluating the catastrophe risk without themselves having to become seismologists or meteorologists.

Note that in contrast, neither the rating agencies nor investors have become comfortable with the existing models for terrorism risk, which is why we continue to believe that neither catastrophe bonds nor other insurance-linked securities can meaningfully contribute to the capacity shortage in this area at this time.

Five years ago when I testified, I explained why many large institutional investors stood on the sidelines of this market notwithstanding these diversification benefits. Today, a few remain on the sidelines but most large U.S. institutional investors participate in the market, even after several bonds suffered large mark-to-market losses following Hurricane Katrina. A "mark-to-market loss" means that secondary trading has established lower values for the bonds even before any bonds actually lose any principal. As yet, no bonds have actually lost principal from Katrina even though the market expects them to do so.

Participation may mean investing in the cat bonds or investing in a dedicated fund that invests in bonds. In coming years, we expect participation to spread worldwide. Further, existing investors will increase their participation in the sector. I will return to this issue of participation later in my testimony and offer a prediction as to the expected market growth in the next 5-10 years.

### **How Do Catastrophe Bonds Actually Work?**

The basic catastrophe bond structure serves a simple purpose: allow insurers to buy collateralized reinsurance and investors to buy rated bonds which have a risk of default based on the reinsurance risk.

Here is how a typical transaction would work: First an insurer would establish a special purpose vehicle or issuer. The insurer enters into a reinsurance agreement with the issuer. The issuer sells rated bonds and places the bond proceeds in trust to collateralize, or secure, the reinsurance agreement. The issuer pays interest on the bonds using reinsurance premiums received from the insurer and the investment returns on the assets in the trust.

If a catastrophe occurs before the reinsurance contract ends, the parties will look at the terms of the reinsurance contract to determine if the insurer is entitled to a recovery. If so, the assets are converted to cash and paid to the insurer as required. At maturity, the issuer repays any remaining trust assets to the investors. In the absence of a claim, the investor receives the return of the entire bond principal.

The trigger for determining whether the issuer has to pay the insurer following a catastrophe can take the form of an indemnity trigger based on the insurer's actual losses or the form of a non-indemnity trigger. Non-indemnity triggers are designed to serve as a proxy for the insurer's actual losses in a way that the investors find more transparent. In a non-indemnity trigger deal, the insurer takes the risk that the non-

indemnity trigger overstates or understates actual losses. This risk is known as basis risk. Trigger choice depends on a tradeoff between transparency, pricing, and basis risk. We do not believe there is one single correct decision.

### **What Is the Current and Future Impact of the Catastrophe Bond Market?**

Cat bonds play an important role in making property insurance in the U.S. more available and affordable. In 2007 thus far, the market has provided over \$5 billion in new catastrophe capacity. This is already slightly more than the total for all of 2006. This capacity growth has occurred in spite of very substantial interest spread declines which make bonds less attractive.

Several factors drive this growth. First, existing investors like owning catastrophe bonds and have dedicated additional funds in recent years and many new investors are following them. Second, sponsors are more comfortable with the technology and like such benefits as multi-year collateralized capacity and elimination of any timing lag on payments. Further, price for protection has dropped.

Most of this new capacity supports U.S. natural catastrophe risk. At present, the approximately \$12 billion of outstanding cat bond issuance offers nearly \$23 billion of capacity. This is possible due to the overlapping coverage provided by so-called 'multiperil' bonds. From this, over \$15 billion of capacity is provided for U.S. natural catastrophe risk.

We expect the cat bond market to continue to grow along with the broader market for tradable insurance risk. The cumulative average growth rate between 2002 and today as measured by the total amount of cat bonds outstanding is 35%. If the market continues to grow at even half this rate for another 5 years, the amount outstanding would be \$56 billion. And there is plenty of room to grow - the \$12 billion outstanding represents a tiny percentage of the overall fixed income markets. For example, the outstanding amount of U.S. dollar denominated bonds equaled \$27 trillion [according to FINRA]. Even if we compare catastrophe bonds rated in the BB range to comparably rated U.S. dollar denominated bonds, the ratio is roughly 1 to 100. Clearly, these numbers dwarf even the potential insured losses from even the largest hurricanes and earthquakes.

We do not believe that any material regulatory barriers exist which prevent further growth in the cat bond market. The investors, sponsors, rating agencies and underwriters have settled on a series of structures that work reasonably well and which continue to evolve. Any changes designed to perfect these slightly imperfect structures would have only a very modest impact on market growth if any. This contrasts with other sectors of the insurance-linked securities market where significant regulatory impediments remain.

It is important to mention that a number of other capital market products also provide additional natural catastrophe capacity. These products include industry loss warranties, exchange traded contracts, insurance derivatives, and capital markets quota shares or "sidecars" to the extent backed by capital other than equity investors (e.g., the mezzanine or debt portion of a sidecar). We note that most equity investors do not provide meaningful additional capacity when investing in sidecars because such investments largely substitute for equity contributions to insurers or reinsurers. In total, adding the impact of these other products to the impact of the cat bond market, the \$12 billion in cat bonds outstanding grows to approximately \$20 - 25 billion of capacity created.

### **Conclusion**

In our view, cat bonds and related solutions play an important role in assuring the continued availability of affordable insurance to policyholders in areas exposed to peak perils such as East Coast hurricanes and California earthquakes. Swiss Re believes this market will continue to grow and will assist in growing insurance capacity throughout the United States and around the world. It is Swiss Re's view that, given time, the private market place will adjust and innovate. We also would like to caution the subcommittees to reject any government mechanisms which ignore risk pricing and the cost of capital. Such proposals will crowd out market development and will only compound the challenges. Thank you for the opportunity to express our views on this very important matter.